14:00-14:50   **Chair : Park Sun Won (KAIST)**
Room : Terrace(3F)   Co-Chair : E-Sok Kang (Chungnam National Univ.)

14:00 – 14:50   **I-TMP-28**

Fuzzy Control of Anti-Sway Motion for a Remote Crane Operation

T.J. Lho, H.W. Joo(Tongmyong Univ.),
W. B. Baek(Doosan Heavy Industry Co.)

This paper presents a fuzzy-based method for classification skin color object in a complex background under varying illumination. Parameters of fuzzy rule base are generated using a genetic algorithm(GA). The color model is used in the YCbCr color space. We propose a unique fuzzy system in order to accommodate varying background color and illumination condition. This fuzzy system approach to skin color classification is discussed along with an overview of YCbCr color space.

14:00 – 14:50   **I-TMP-29**

Fuzzy Sliding Mode Observer for Nonlinear System

SamJun Seo(Anyang Univ.), DongSik Kim, HoJoon Seo(SoonChunhyang Univ.)

This paper deals with a fuzzy sliding mode observer for nonlinear systems. A nonlinear system is approximated by a multiple model Takagi Sugeno fuzzy system and then transformed into a canonical form for which a nonlinear observer is constructed. This study presents a type of fuzzy sliding mode observer that deals with matched and unmatched uncertainties in the plant dynamics very effectively. The proposed method was validated by the example of a inverted pendulum.

14:00 – 14:50   **I-TMP-30**

Optimized Neurocontroller for Human Control Skill Transfer

Kap-Ho Seo, Changmok Oh, Ju-Jang Lee (KAIST)

A human is an expert in manipulation. We have acquired skills to perform dexterous operations based upon knowledge and experience attained over a long period of time. It is important in robotics to understand these human skills, and utilize them to bring about better robot control and operation. It is hoped that the neurocontroller can be trained and organized by simply presenting human teaching data, which implicate human intention, strategy and expertise. In designing a neurocontroller, we must determine the size of neurocontroller. Improper size may not only incur difficulties in training neural nets, e.g. no convergence, but also cause instability and erratic behavior in machines. Therefore, it is necessary to determine the proper size of neurocontroller for human control transfer. In this paper, a new pruning method is developed, based on the penalty-term methods. This method makes ...